"Magnus in hoc genere. Antennæ corpore paullo breviores, crassæ, rufæ; articulis distinctis cylindricis. Caput rufum. Thorax planus, depressus, margine utrinque antice posticeque acutiusculo. Elytra striata. Pedes breves compressi."

Sp. 4. Cato. puncticollis. *Ferruginea, obscura; prothorax rugose punctatus, medio late depressus, linea mediana longitudinali glabra: singuli elytri striæ sex, exteriores indistinctæ.* (Corp. long. ·4 unc.; lat. ·1 unc.)

Ferruginous, with very little gloss. Form very short and stout, depressed, linear; antennæ hairy; head sculpture almost precisely as in the two preceding species. The prothorax is coarsely punctured, and has a large but shallow dorsal impression more rugosely punctured than the other parts, and through the middle of this passes a raised longitudinal glabrous line. Each elytron has six equidistant striæ, the two nearest the suture are united at the base: these, as well as the third and fourth, are clearly defined; the fifth and sixth are slight and indistinct.

Inhabits North America. The Rev. F. W. Hope, to whom I am indebted for the opportunity of describing this species, has labelled it "*rufus*, Fab." He possessed a second specimen, very much smaller, which he considers distinct.

XLVI.—*On the Existence of a Third Tunic, together with certain other peculiarities in the Structure of Pollen.* By Herbert Giraud, F.B.S.E., Mem. Med. Soc. Edin.

[With a Plate.]

In pursuing a series of observations on the structure and functions of pollen, some points of anatomical peculiarity have been presented to my notice which may not be wholly devoid of interest.

The existence of two membranes or tunics in the pollen-grain has long since been satisfactorily determined by Brongniart, Amici, and Brown, and is proved in a most decisive manner by the effects produced upon pollen by the action of sulphuric acid; for when immersed in the dilute acid, the pollen is seen to swell until suddenly a rupture takes place in the outer tunic, upon which, however, neither the fovilla

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In examining the pollen of *Polemonium cœruleum*, immersed in water, with a power of about 500, the surface of the grains appeared studded with very minute and perfectly opake bodies, some of which left the grain, and floated in the water on the object-glass (fig. 8. *a*.). Upon looking more attentively at these bodies, I found that each possessed a spontaneous and independent motion, exactly similar to that possessed by the globules of the blood, or to that which Brongniart describes as having witnessed in the granules of the pollen of the Gourd and of the Mallow. Although I could detect no grains that had burst, still I supposed that these bodies might be the pollen granules, and that therefore this was merely a repetition of the observation of Brongniart. The pollen-grains being made to burst and emit their granules, an obvious distinction at once, between the latter and the minute bodies, became apparent. The true granules were larger than these bodies, from which they might also be distinguished by their translucency. Of the nature or uses of these bodies I have not been able to form even a conjecture; but that their motion is independent of all external agencies I feel quite satisfied.

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pollen-grains possessing a smooth surface. It was supposed by Guillemin to be a slit in the outer tunic intended to facilitate the admission of water into the interior of the grains, and the emission of their fovilla. The observations which I have made in reference to this point have shown that the longitudinal line has not, in any case, the appearance of a slit, as it has greater opacity, when the grain is dry, than any other part; and were it a slit, it would not disappear under the action of water, (which is the case,) but, on the contrary, as the pollen-grain enlarged, it would become more patulous. It would therefore appear that the true nature of this linear marking is, that in the dry state the outer membrane is depressed and folded in, so as to form a furrow; but that when moisture is applied the grain swells, the fold is expanded, and finally disappears. This statement is confirmed by the appearances which I found to be presented by the pollen of *Antirrhinum majus*. In the dry state its form is cylindrical, but under the action of water it swells and becomes spherical; the furrow, at the same time, is seen gradually to unfold and at last to disappear (fig. 9, 10, 11, 12). Moreover, in the early stages of its development, when surrounded with fluid, and being therefore in a moist condition, no furrow is perceptible.

Besides the several proximate principles which have been shown by chemists to exist in pollen, I have succeeded in detecting in certain species a very marked quantity of carbonate of potassa. Whilst making an observation on the pollen of *Antirrhinum majus* immersed in dilute sulphuric acid, the field of the microscope became crowded with a quantity of acicular crystals. As the fluid gradually evaporated, the pollen-grains were found to act as nuclei, from which the crystals radiated in all directions (fig. 13.). Their form appeared to be that of quadrilateral prisms with obliquely truncated extremities. The portion of this salt was of course infinitely too small to afford a sufficient quantity for analysis; the only method therefore of determining its constitution was to discover the form of its crystal, and that of other salts which might be formed by its decomposition. It was obvious that it must be a sulphate of some base; and as potassa is an

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XLVII.—*Observations on several British Fishes, including the description of a New Species.* By William Thompson, Esq., Vice-President of the Natural History Society of Belfast*.

[With a Plate.]

1. *On the British Species of the Genus* Monochirus, *Cuv.*

By the kindness of Dr. Parnell in supplying me with specimens of the Red-backed Flounder of Hanmer, 'Pennant's Brit. Zool.,' (v. iii. p. 313. pl. 48. ed. 1812,) and the *Mon. minutus*, Parn., I am enabled to speak decidedly on some points which, in my previous remarks on these species, 'Annals Nat.

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1. *On the British Species of the Genus* Monochirus, *Cuv.*

By the kindness of Dr. Parnell in supplying me with specimens of the Red-backed Flounder of Hanmer, 'Pennant's Brit. Zool.,' (v. iii. p. 313. pl. 48. ed. 1812,) and the *Mon. minutus*, Parn., I am enabled to speak decidedly on some points which, in my previous remarks on these species, 'Annals Nat.

* Read before this Society December 5, 1838, and illustrated by the specimens of which it treated.